

**In re Application of WILLIAMS et al.
Serial No. 09/849,170**

REMARKS

The Office action has been carefully considered. The Office action rejected claims 1- 3, 5, 9-14, and 19-22 under 35 U.S.C. § 102(b) as being anticipated by 5,239,292 to Willan ("Willan"). Further, the Office action rejected claims 4, 6, 7, 15, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Willan in view of U.S. Patent No. US 6,188,392 to O'Connor et al. ("O'Connor"). Further yet, the Office action rejected claims 8, 17, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Willan and O'Connor in view of Japanese Patent No. 06-019614 to Yamashita et al. ("Yamashita"). Applicants respectfully disagree.

By present amendment, claims 1, 9, and 18 have been amended for clarification and not in view of the prior art. Applicants submit that the claims as filed were patentable over the prior art of record, and that the amendments herein are for purposes of clarifying the claims and/or for expediting allowance of the claims and not for reasons related to patentability. Reconsideration is respectfully requested.

Prior to discussing reasons why applicants believe that the claims in this application are clearly allowable in view of the teachings of the cited and applied references, a brief description of the present invention is presented.

Applicants' technique is generally directed towards providing thickness information for digital ink. To this end, applicants may use a thickness conversion component that converts movement of a pen or tilting of a pen into thickness information for digital ink data. The pen in applicants' technique may include at

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least one ballistic information generator (typically an accelerometer) that is used to generate either ballistic movement or ballistic pen tilting information based on self-movement. For example, the accelerometer generates the movement or tilt information in the form of pulses, the width of each pulse being directly related to the acceleration of the pen movements or the tilt of the pen, respectively. The thickness conversion component converts the acceleration information, with or without additional information such as coordinate information, available pressure information, pen angle information, and vector information, into thickness information for digital ink. Thus, no other outside information is needed to generate thickness information but for the information generated from the ballistic generator. The information about the writing instrument is generated relative to itself. This thickness information may be used to generate variably thick lines, which may be useful for a variety of applications, for example, better display and improved recognition.

Note that the above description is for example and informational purposes only, and should not be used to interpret the claims, which are discussed below.

Rejections based on §102(b)

Turning to the claims, amended claim 1 recites a computer system, comprising a writing instrument that generates, relative to itself and using a ballistic information generator ballistic information about self-movement, movement information including acceleration information from a user's handwriting and a

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conversion component that utilizes the acceleration information to generate line thickness information.

The Office action rejected claim 1 as being anticipated by Willan. More specifically, the Office action contends that Willan teaches a computer system comprising a writing instrument that generates, using a ballistic information generator, movement information including acceleration information from a user's handwriting. Column 1, lines 54-67 of Willan are referenced. Further, the Office action contends that Willan teaches a conversion component that utilizes the acceleration information to generate line thickness information. Column 4, lines 28-33 of Willan is referenced. Applicants respectfully disagree.

Willan is directed, generally, to a graphics system having an input device, an associated computer for detecting changes in the position of the input device relative to a writing surface, and a monitor for displaying patterns which follow the movement of the input device. In particular, Willan teaches a system that attempts to simulate a brush with a pressure-sensitive input device. The system of Willan specifically teaches a pressure sensor system in the input device that breaks the stroke signal into typical "x" and "y" coordinates. The input device is further able to determine a "z" axis coordinate as well by monitoring a pressure sensor. Thus, these three parameters are used to interpret the movement of the tip of input device when engaged with a writing surface to yield a myriad of stroke information to display on the monitor, *i.e.*, "painting." Willan teaches that the thickness of lines displayed may vary based upon an analysis of the sensed pressure in the "z" direction at the tip of the input device on the writing surface.

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However, it is very clear that because Willan teaches the use of pressure sensor and a writing surface in order to garner information about the movement of the pen, then it necessarily must be engaged with a writing surface that is able to interpret such pressure information. That is, all information derived about the movement of the pen is relative to a writing surface.

In contrast, claim 1 generally recites a writing instrument that generates, relative to itself and using a ballistic information generator that generates ballistic information about self-movement. A pressure sensor, as taught by Willan is not a ballistic information generator that generates information based on self-movement relative to itself. A pressure sensor can only generate information about sensed pressure that result from engaging a surface, *i.e.*, relative to a surface. A pressure sensor as taught by Willan is not a ballistic information generator as claimed.

Furthermore, as has been previously argued, in the recitations of claim 1 the thickness information is generated from the acceleration information, and not from a pressure sensor as Willan teaches. The system and technique disclosed by Willan is significantly different from applicants' and uses a pressure sensor to generate thickness information, rather than acceleration information as claimed by applicants. Generating thickness information from a pressure information is vastly different from generating thickness information from acceleration information. A pressure sensor that generates pressure information is not a ballistic information generator that generates acceleration information.

Nevertheless, claim 1 has been amended to recite that the ballistic information generator generates ballistic information about self-movement relative

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to itself. Surely, Willan cannot be construed to teach that the pressure sensor as taught is able to generate information about self-movement relative to itself. This cannot be, as the pressure sensor must necessarily engage a surface in order to determine a pressure on the sensor relative to the surface; a pressure sensor requires a surface for pressing against otherwise it would always read the same. Applicants submit that claim 1 is allowable over the Willan and other prior art of record for at least these reasons.

Applicants respectfully submit that dependent claims 2, 3, and 5 by similar analysis, are allowable. Each of these claims depends either directly or indirectly from claim 1 and consequently includes the recitations of independent claim 1. As discussed above, Willan fails to disclose the recitations of claim 1 and therefore these claims are also allowable over the prior art of record. In addition to the recitations of claim 1 noted above, each of these dependent claims includes additional patentable elements.

Turning to the next claim rejected under §102, amended claim 9 recites a computer system, comprising, a writing instrument that generates, relative to itself and using a ballistic information generator, movement information including acceleration information from a user's handwriting, and a conversion component that utilizes the acceleration information to generate line thickness information based upon spacing of plots in a map of a plot of the movement information.

The Office action rejected claim 9 as being anticipated by Willan. The Office action provides references to Willan to support reasons that are identical to the reasons given for the rejection of claim 1. Applicants respectfully disagree.

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As discussed above, Willan teaches the use of a pressure sensor to garner information about the movement of a pen. However, it is very clear that because Willan teaches the use of pressure sensor and a writing surface in order to garner information about the movement of the pen, then it necessarily must be engaged with a writing surface that is able to interpret such pressure information. That is, all information derived about the movement of the pen when using a pressure sensor is relative to a writing surface.

In contrast, claim 9 generally recites a writing instrument that generates, relative to itself and using a ballistic information generator, movement information including acceleration information from a user's handwriting. A pressure sensor that uses pressure information to generate handwriting information, as taught by Willan is not the same as a ballistic information generator uses acceleration information to generate handwriting information.

Further still, the thickness information is generated from the acceleration information in the recitations of claim 9 and not from pressure sensor information as Willan teaches. The system and technique disclosed by Willan is significantly different from applicants' and uses a pressure sensor to generate thickness information, rather than acceleration information as claimed by applicants. Generating thickness information from a pressure sensor is vastly different from generating thickness information from a ballistic information generator. A pressure sensor is not a ballistic information generator.

Notwithstanding these differences, claim 9 has been amended to recite that the ballistic information generator generates ballistic information about a user's

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handwriting relative to itself. Surely, Willan cannot be construed to teach that the pressure sensor as taught is able to generate information relative to itself. This cannot be as the pressure sensor must necessarily engage a surface in order for a writing pressure to be sensed. Applicants submit that claim 9 is allowable over the Willan and other prior art of record for at least these reasons.

Applicants respectfully submit that dependent claims 10-14 by similar analysis, are allowable. Each of these claims depends either directly or indirectly from claim 9 and consequently includes the recitations of independent claim 9. As discussed above, Willan fails to disclose the recitations of claim 9 and therefore these claims are also allowable over the prior art of record. In addition to the recitations of claim 9 noted above, each of these dependent claims includes additional patentable elements.

Regarding claims 19-22, the Office action rejected these claims under §102(b) as being anticipated by Willan. However, these claims depend from independent claim 18 which has been rejected under §103(a) as unpatentable over Willan in view of Yamashita. In the rejection of claim 18, the Office action acknowledges that not all of the recitations of claim 18 are taught by Willan. Consequently, a §102 rejection cannot be supported for any dependent claims therefrom. Applicants respectfully traverse the rejection of claims 19-22.

Rejections based on §103(a)

The Office action rejected claims 4, 6, 7, 15, and 16 as being unpatentable over Willan in view of O'Connor. Further yet, the Office action rejected claims 8,

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17, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Willan and O'Connor in view of Japanese Patent No. 06-019614 to Yamashita.

By law, in order to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In addition, "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Further, if prior art, in any material respect teaches away from the claimed invention, the art cannot be used to support an obviousness rejection. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed Cir. 1997).

Applicants respectfully submit that dependent claims 4 and 6-8 by similar analysis to claim 1 are allowable. Each of these claims depends either directly or indirectly from claim 1 and consequently includes the recitations of independent claim 1. Willan, O'Connor, and Yamashita, whether considered alone or in any permissible combination with each other or any other prior art of record, fail to teach or even suggest the recitations of claim 1 and therefore these claims are also allowable; even if the combination is somehow permissible, O'Connor, and Yamashita fail to cure the significant deficiencies of Willan as discussed above. In addition to the recitations of claim 1 noted above, each of these dependent claims includes additional patentable elements.

Applicants respectfully submit that dependent claims 15 and 16, by similar analysis to claim 9, are allowable. Each of these claims depends either directly or indirectly from claim 9 and consequently includes the recitations of independent

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claim 9. Willan and O'Connor, whether considered alone or in any permissible combination with each other or any other prior art of record, fail to teach or even suggest the recitations of claim 9 and therefore these claims are also allowable. In addition to the recitations of claim 9 noted above, each of these dependent claims includes additional patentable elements.

Turning to the last independent claim, amended claim 18 recites a computer system, comprising a writing instrument that generates, relative to itself, movement information including acceleration and tilt information from a user's handwriting and a conversion component that utilizes the acceleration information to generate line thickness information based upon spacing of plots in a map of a plot of the tilt information.

Applicants submit that the Office action has failed to establish a *prima facie* case for obviousness. As discussed above, Willan teaches a pressure sensor system in the input device that breaks the stroke signal into typical "x", "y", and "z" coordinates. These parameters, however, are all generated relative to a surface (*i.e.*, a pressure sensor must engage a surface). Claim 18 recites generating movement information about the writing instrument relative to itself. Generating information about the movement of a writing instrument in a manner that is relative to itself is different that a manner that is relative to a writing surface.

Yamashita, even if permissible to combine with Willan, does not remedy this deficiency, as Yamashita is merely directed to another system wherein a writing instrument may garner some kind of information about its movement relative to a surface, *i.e.*, a tablet having a surface that may sense tilt information as disclosed

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in the abstract and Fig. 3 of Yamashita. Thus, there is no prior art of record that teaches or even suggests a writing instrument that generates, relative to itself, movement information including acceleration and tilt information from a user's handwriting

Further, Willan and Yamashita even teach away from applicants' invention by requiring a specific tablet or surface in order to determine relative line thickness information rather than using acceleration information about the writing instrument itself and relative to itself as claimed by applicants. In specific, Willan teaches that the thickness of lines displayed may vary based upon an analysis of the sensed pressure in the "z" direction at the tip of the input device on the writing surface. Nowhere in any prior art of record is such a concept of tilt information gleaned from an analysis of the movement of a writing instrument relative to itself taught or even suggested, let alone tilt information gleaned from acceleration sensed at the pen relative to itself. Any suggestion that these references may be combined in this manner is overly broad. Such broad, conclusory statements do not come close to adequately addressing the issue of motivation to combine, are not evidence of obviousness, and therefore are improper as a matter of law. *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Further, if anything, the references teach away from such a combination, as discussed above. Willan and Yamashita fail to teach or even suggest the recitations of claim 18 and therefore applicants submit that claim 18 is also allowable.

For at least these additional reasons, applicants submit that all the claims are patentable over the prior art of record, whether considered alone or in any

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permissible combination. Reconsideration and withdrawal of the rejections in the Office Action is respectfully requested and timely allowance of this application is earnestly solicited.

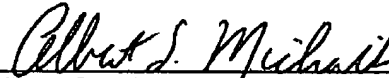
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CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that claims 1-22 are patentable over the prior art of record, and that the application is in good and proper form for allowance. A favorable action on the part of the Examiner is earnestly solicited.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney at (425) 836-3030.

Respectfully submitted,



Albert S. Michalik, Reg. No. 37,395
Attorney for Applicants
Law Offices of Albert S. Michalik, PLLC
704 - 228th Avenue NE, Suite 193
Sammamish, WA 98074
(425) 836-3030
(425) 836-8957 (facsimile)